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STANDARD SPECIFICATION

*for the*

Manufacture, Furnishing and  
Setting of Terra Cotta

FIRST EDITION

September 1923

National Terra Cotta Society

19 West 44th Street

NEW YORK



We desire to express our appreciation for the valuable assistance rendered by representatives of the Structural Service Committee of the American Institute of Architects and of the National Bureau of Standards, Washington, D. C., in the preparation of this, the Standard Specification for Terra Cotta.

NATIONAL TERRA COTTA SOCIETY

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# Standard Specification

for the

## Manufacture, Furnishing and Setting of Terra Cotta

Adopted by NATIONAL TERRA COTTA SOCIETY

NOTE:—The Architect or Specification Writer will find it convenient to follow the Short Form Specification beginning with Section 63.

The Short Form incorporates all the provisions of the Standard Terra Cotta Specification, but eliminates the necessity of mentioning them in detail.

Reference to the Glossary, Sections 50-62, will supply the surface finish, ceramic finish, and color data necessary to specify surface and color correctly.

The Corollary Clauses, Sections 85, 86, explain the setting option between mason and manufacturer.

Sections 87-91 under Corollary Clauses explain the specifications for flashing, sheet metal, structural steel, structural concrete and rough carpentry. These specifications form a part of the Terra Cotta Specification, although the materials are supplied and set in place by different contracting parties.

### A.—GENERAL INFORMATION.

1. The Terra Cotta manufacturer shall be furnished with all drawings, details and other information necessary for the manufacture of Terra Cotta, including drawings for all classes of work with which the Terra Cotta engages.
2. Wherever Terra Cotta is required to match in contour, color, finish and surface treatment, existing Terra Cotta, as for example in connection with alterations or additions to existing work, the Terra Cotta manufacturer shall be furnished with the required profiles and samples of the original work, and other needed information.
3. The Terra Cotta manufacturer shall, before proceeding with manufacture, submit to the architect for his correction and approval, shop drawings showing jointing and construction of the Terra Cotta and provision made for all flashing and counter flashing. These drawings must conform as nearly as practicable to the architect's drawings, but shall be in accordance with good Terra Cotta structural practice.
4. All pieces of Terra Cotta shall be numbered. The Terra Cotta manufacturer shall provide two copies of the completed scale shop drawings to be used for setting and showing the piece numbering of the Terra Cotta, and the size of the joints to be used for setting the various portions of the work clearly indicated. These drawings shall be designated as the setting drawings.
5. The Terra Cotta manufacturer shall furnish, as promptly as possible, a schedule of all special anchors, hangers, etc., necessary to secure and support the Terra Cotta in a manner approved by the architect.

DRAWINGS  
AND  
SCHEDULES.

### B.—MATERIAL.

6. Note. In view of the researches now being conducted by the National Bureau of Standards at the instance of the National Terra Cotta Society, it seems inadvisable to attempt, at this time, to write either quality clauses in terms of crushing strengths, densities and elasticity, or specifications for tests. Clauses descriptive of the desirable physical characteristics and of tests to prove compliance of the material

QUALITY.  
TESTS.

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with such physical requirements will be prepared as soon as the necessary data are available and inserted in a later edition of this standard specification.

7. All ornament shall be artistically modeled by the Terra Cotta manufacturer's staff artists. (Or, models made to Terra Cotta shrinkage scale will be furnished to Terra Cotta manufacturer, without cost to him, securely crated for shipment f. o. b. modellers' studio at ).
8. Photographs in duplicate of all ornament shall be submitted to the architect for his approval or correction, or, if he so desires, he may inspect all modeling at the factory. Such approval or inspection by the architect shall be made promptly. No ornamental work shall be burned until modeling has been approved.
9. The surface finish, ceramic finish and color of all exposed surfaces of Terra Cotta shall be as indicated by the architect's drawings or as specified. For surface and ceramic treatments, see Glossary of Terms relating to Terra Cotta, which is hereby made a part of this specification.
10. The ceramic finish shall be applied to the Terra Cotta in such a manner as thoroughly to coat the exposed surfaces.
11. The Terra Cotta manufacturer shall submit samples of the color or colors of the ceramic finish to the architect for his approval, and all Terra Cotta shall conform without marked variation to the sample or samples so approved.

#### MODELING.

#### SURFACE FINISH, CERAMIC FINISH AND COLOR.

#### SAMPLES.

### C.—DESIGN AND STRUCTURE.

12. Walls shall not be less than one inch thick and partitions shall be of such thickness and so spaced as to perform their proper functions with regard to form and structure. Each piece of Terra Cotta shall be provided with the necessary anchor holes and hand holes and shall be so formed as properly to engage the structure. Beds generally shall be not less than 4" deep.
13. Projecting courses, cornices and heavy ornamental detail may have washes, drips and weep holes, where shown on the approved shop drawings.
14. Where so shown the washes of all projecting cornices and other exposed horizontal surfaces shall have provision made for flashing. All surfaces where the wash pitches inward toward the structure and stops against superimposed work; all balcony floors, and all gutter grades shall have provision made for flashing.
15. Raggles shall be provided to receive gutter linings and flashings when the joints can not be used for the purpose. Raggles shall be not less than  $\frac{3}{4}$ " deep.
16. All capping courses, copings and sills except of the "slip" type, shall have stools and lugs at intersections with vertical surfaces.
17. All joints shall be straight and true and of an approximate uniform width of  $\frac{1}{4}$ ". All Terra Cotta shall be laid out at the factory to test it for uniformity of joint widths and over-all dimensions. Where necessary to secure accurate dimensions and uniform joint widths, the material shall be sized straight and true.

#### ENDS, WALLS AND PARTITIONS.

#### WASHES, WEEP HOLES AND DRIPS.

#### PREPARATION FOR FLASHING.

#### JOINTS.



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## D.—TRANSPORTATION, STORAGE AND PROTECTION.

18. Unless otherwise specifically agreed, all Terra Cotta shall be furnished by the manufacturer f. o. b. cars factory, with freight allowed to destination. All Terra Cotta shall be carefully packed in hay, straw, excelsior or other suitable material. **SHIPMENT, DELIVERY AND CARE.**
19. If any pieces of Terra Cotta are damaged in transit, the manufacturer shall be immediately notified in writing by the setting contractor and proceed with the remaking of the pieces. The responsibility for the cost of such replacements shall be determined by the point of delivery fixed by the contract under which the Terra Cotta is delivered. If the point of delivery is beyond the immediate control of the manufacturer, the setting contractor shall assume responsibility for the necessary proof of damage. **REPLACEMENTS.**

## E.—ERECTION.

20. The setting contractor shall receive the Terra Cotta on arrival at the freight yards and shall transfer it without damage from the cars to the building. When the Terra Cotta manufacturer delivers on trucks at the building the setting contractor shall unload and store the Terra Cotta. Terra Cotta shall be stored under cover, not in contact with the ground, stacked without inflammable packing on wood laths or strips, so as to protect it from injury. **HANDLING.**
21. All Terra Cotta shall be set by mechanics experienced in the handling and setting of the material. **MECHANICS.**
22. Notice of errors in the manufacture of the Terra Cotta shall be given to the manufacturer immediately upon discovery. Cutting or fitting due to such errors shall be done by the Terra Cotta manufacturer or shall be paid for by him if he fails to do the necessary cutting or fitting promptly upon receipt of notice. **CUTTING AND FITTING AT THE BUILDING.**
23. Other necessary cutting and fitting of the Terra Cotta that may be required at the building, including all fitting around anchors, steel and iron work and reinforced concrete, shall be done by the contractor for setting Terra Cotta.
24. *In Connection with Structural Steel.* Beams, channels, angles, T's, plates and fabricated members for supporting Terra Cotta and which are not secured to the structural steel by rivets or short bolts, as shown on the architect's drawings, together with all anchors, hangers, bolts, clips, straps, rods and pins for securing Terra Cotta, shall be furnished and set by the contractor for setting Terra Cotta. **SUPPORTING METAL WORK AND ANCHORS.**
25. *In Connection with Structural Concrete.* The contractor for structural concrete shall furnish and set all supporting metal work imbedded in the concrete and all shelf angles and continuous rods. All such metal work shall conform to the requirements of the setting drawings prepared by the Terra Cotta manufacturer.



## II-TRANSPORTATION, STORAGE AND PROTECTION

Information regarding the transportation, storage and protection of the material is contained in the following sections of the manual:

1. Transportation: This section contains information on the safe handling, loading, unloading, and stowage of the material during transport.

2. Storage: This section contains information on the proper storage of the material, including the use of appropriate containers and the location of storage areas.

3. Protection: This section contains information on the measures to be taken to protect the material from damage, theft, and unauthorized access.

## III-GENERAL INFORMATION

1. Introduction

2. Description

3. Safety Precautions

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26. All other loose iron such as clamps, hangers, clips, straps, and pins shall be furnished and set by the Contractor for setting Terra Cotta.
27. All anchors, hangers, bolts, clips, straps, rods and pins for securing Terra Cotta shall be of wrought iron or non-corroding soft steel.
28. Anchors, hangers, bolts, clips, straps, rods and pins for securing the Terra Cotta, except where otherwise shown or specified, shall be of the following minimum sizes:
29. Anchors:—(a) For ashlar or courses balanced on the wall, shall be  $\frac{1}{4}" \times \frac{1}{4}"$  or  $\frac{1}{8}" \times \frac{5}{8}"$ , or No. 6 gauge galvanized wire.
30. (b) For projecting courses not balanced on the wall, shall be not less than  $\frac{5}{8}"$  round or square bars of equal cross section.
31. Hangers shall be  $\frac{5}{8}"$  diameter round bars or other shapes of equal cross section area.
32. Clips and straps shall be  $\frac{3}{4}" \times 2"$ .
33. Pins shall be  $\frac{1}{2}"$  diameter round bars.
34. Continuous rods on concrete wall faces to which Terra Cotta ashlar is clipped, shall be  $\frac{5}{8}"$  diameter round bars which shall be secured to the masonry with  $\frac{1}{2}"$  diameter round anchors placed not more than 2' 0" on centers.
35. All steel or iron supporting metal work shall be clean and thoroughly protected with two coats of pure red lead and linseed oil paint, asphaltum applied hot, or other approved protective compound.
36. Metal work of every description, supporting Terra Cotta, shall be imbedded thoroughly in the masonry backing and when not so imbedded, metal work shall be protected against corrosion by encasing with cement mortar or in cement mortar masonry.
37. When the back of a Terra Cotta course comes in contact with iron or structural concrete in such manner as to prevent the encasing of supporting iron from the rear, an opening shall be made in the top to admit of the placing of the encasing mortar as required above.
38. All cement used for setting mortar shall be of a standard brand of Portland cement fulfilling the requirements both physical and chemical of the standard specifications for Portland cement adopted by the American Society for Testing Materials.
39. All sand used for setting mortar shall be clean, sharp and well graded in size.
40. All mortar for setting and pointing shall be composed of one volume of Portland cement to three volumes of sand. Hydrated lime, not to exceed 9 pounds to the sack of cement, shall be added.
41. The sand and cement and lime, if any, shall be thoroughly mixed dry before any water is added. The use of retempered mortar shall not be permitted.

PROTECTION  
OF  
SUPPORTING  
METAL WORK.

MORTAR.



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42. All Terra Cotta shall be set true to a line and carefully laid in a solid bed of mortar. All rebates in bed and cross joints from front to back and top to bottom, shall be filled solid with mortar leaving no voids. Each piece of Terra Cotta shall be tamped into place, excess mortar cut off and struck with a jointer or trowel. All sills, wall copings and other capping courses, shall be set in a thick bed of mortar and well pounded down so that the mortar fills all spaces around bottom of webs of Terra Cotta.

## SETTING.

43. All Terra Cotta projecting courses shall be so set that the arris casting a shadow shall be true to line.

44. When the Terra Cotta work is of such scope or character that the proper handling and setting of the Terra Cotta require special skill and knowledge, the Terra Cotta manufacturer shall, if required by the contract, furnish a competent Terra Cotta setter to assist in the sorting, selecting and handling of the Terra Cotta, to co-operate with the setting contractor, to assist him when cutting or fitting of the Terra Cotta is necessary, to advise as to interpretation of setting drawings and to help generally in securing rapid, efficient progress during the setting of the Terra Cotta. For such service the setting contractor shall pay such setter full time at his regular wage rate. When the furnishing of such a competent setter involves traveling expenses, the setting contractor shall pay the same and also make an allowance for his board.

45. When the services of such a competent setter are not required under the contract, the Terra Cotta manufacturer may, at his own option and expense, send such a representative to the work who shall perform the above services, and the setting contractor shall co-operate with and aid and facilitate the performance of such services by such representative.

46. All joints in Terra Cotta shall be pointed and struck as the setting progresses except in freezing weather. In freezing weather and when re-pointing is necessary, all joints shall be raked or cut out to a depth of  $\frac{1}{2}$ " and the pointing mortar driven into the joint and struck with a jointing tool.

## POINTING.

47. All joints in overhanging Terra Cotta, balustrades, parapets and free standing features shall have joints raked out one-half ( $\frac{1}{2}$ ) inch, and pointed with an approved elastic cement.

48. All uncompleted walls including Terra Cotta and backing shall be protected by waterproof covering at night and at any time when liable to injury from storms or freezing. (Note:—All other protection required for projecting courses, jambs of openings, etc., is provided for under the work of other trades).

## PROTECTION.

49. Upon completion of the work, mason's wedges, shoring, supports and centering and all other false work and protections shall be removed and the Terra Cotta cleaned down. If satisfactory results cannot be obtained by the use of abrasive soap or washing powder, a solution consisting of  $1\frac{1}{2}$  pints of muriatic acid to a gallon of water may be used. In the use of acid solutions only wooden pails and fibre brushes shall be employed.

## CLEANING DOWN.





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## Glossary of Terms Relating to Terra Cotta

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50. Surface Finish designates the texture of the surface of the clay body prior to application of Ceramic Finish. SURFACE  
FINISH.
51. It may be:
- (a) *Smooth.*
  - (b) *Tooled or Drove.*
    - (b1) Eight lines to the inch.
    - (b2) Six lines to the inch.
  - (c) *Light irregular drag or combing.*
  - (d) *Heavy irregular drag or combing.*
  - (e) *Special.*
52. A special Surface Finish like "bush-hammered," "pitted," "vermiculated," etc., involves extra expense and, if required, should be clearly specified.
53. *Surface Finish for unglazed surfaces* may be smooth or may be tooled with a light or heavy drag. Flat surfaces of sufficient width may be tooled, while the curved surfaces of mouldings may be left smooth.  
*Surface Finish for glazed Ceramic Finish* (whether lustrous or mat) is usually made smooth.
54. *Granite Colors*, if unglazed, may be made smooth or with irregular drag, or pitted. A bush-hammered or special surface involves extra expense, and if required should be clearly specified. If glazed Ceramic Finish is used for Granite Colors the surface treatment is usually smooth.
55. Ceramic Finish designates the surface and color applied by the ceramic processes of coating, glazing, burning, etc. CERAMIC  
FINISH AND  
COLOR.
56. (1) *Unglazed Terra Cotta*: Terra Cotta with a Ceramic Finish producing an unglazed finish made in various shades of buff, gray, salmon, red and brown. Most colors thus made are vitreous.
57. (2) *Glazed or Enameled Terra Cotta*: Terra Cotta having an impervious Ceramic Finish of a glassy texture which may be either lustrous or mat (sometimes designated as full or dull glazes or enamels) made in various colors.
58. (3) *Granite Color Terra Cotta*.
- (a) Unglazed Granite Color:—A mottled Ceramic Finish similar to unpolished granite.
  - (b) Glazed or Enameled Granite Color:—A mottled Ceramic Finish similar to polished granite, made either lustrous or mat.
59. (4) *Polychrome Terra Cotta or Faience*: Terra Cotta having two or more colors on the same piece.
- (a) Polychrome, unglazed:—Unglazed Terra Cotta having two or more colors on the same piece.



Glossary of Terms Relating to  
Terra Cona

20. Surface Photo-Definition: The location of the surface of the clay body  
prior to application of Terra Cona.
21. It may be:  
(a) Shaded  
(b) Tinted or Painted  
(c) Light lines to the top  
(d) Dark lines to the top  
(e) Light irregular lines or markings  
(f) Dark irregular lines or markings  
(g) Shaded

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(b) **Polychrome, glazed:**—Glazed Terra Cotta having two or more colors on the same piece.

(c) **Polychrome, blended colors:**—Made only in glazed Terra Cotta. If, in polychrome glazed work, the colors are not to be separated by definite lines or contours of ornaments, but are to be blended together by brush treatment, or the like, the term "Polychrome, blended colors" shall be used. The character of work expected should be explicitly described.

(Note. For polychrome work always clearly specify the work to be done and the number of colors on a single piece).

60. (5) **Special:** There are a number of Ceramic Finishes used by individual manufacturers the processes for which are patented or the names copyrighted which are not included in this Glossary.

61. (6) **Semi-Glaze:** An ambiguous term which should never be used.

62. (7) **Fire-Gilding:** A coating of gold glaze either mat or lustrous, fixed by an additional burning. (The area of surface to be gilded should be clearly described).

## GENERAL CONDITIONS

63. The general conditions of the American Institute of Architects' Terra Cotta Contract shall govern all work under this contract and all work shall be subject to the provisions thereof.

64. The work shall be the responsibility of the architect and shall be subject to his inspection and approval. The architect shall be responsible for the design and construction of the work.

65. All work shall be of the highest quality and shall be of the best material available.

66. The following items are included in the contract price for Terra Cotta work:

(a) Delivery of material to the site.

(b) The handling and erection of material including scaffolding and all other work necessary for the completion of the work.







# Short Form Specification

FOR

## The Manufacture, Furnishing and Setting of Terra Cotta

For Incorporation in the Architect's  
Specifications

To be used in connection with Standard Specifications and the Standard General  
Conditions of the American Institute of Architects.

63. (Note to architect:—The Standard Specification does not state who shall set the Terra Cotta, who shall provide wood centering, scaffolding, hoists, cover boards and protection (except tops of walls against weather). It does not include any cement or concrete work in connection with forming gutter grades and washes on projecting courses and features, or the furnishing or setting of sheet metal flashings and gutter linings. It does not include the furnishing and erection of metal supporting members which are riveted or bolted with short bolts to the structural steel or structural concrete. It requires the architect to show on his drawings the sizes and arrangement of rolled or fabricated structural shapes used for supporting Terra Cotta. (See notes on corollary clauses at end of this specification for the work of other trades to take care of such omissions).

### GENERAL CONDITIONS.

64. The general conditions of the American Institute of Architects, Third Edition, shall form a part of this specification and contract and all work shall be subject to the provisions thereof.
65. The work included in the contract comprises the manufacture, (and) delivery (and setting) of all Terra Cotta in accordance with the contract drawings and these specifications.
66. All (here insert a complete description of work) shall be of Terra Cotta.
67. The following items are not included as a part of the contract for furnishing (and setting) Terra Cotta.
- (a) Masonry backing. See specifications for (.....)
  - (b) The furnishing and erection of metal supporting members which are riveted or bolted with short bolts to the structural steel. See specifications for (.....)

WORK  
INCLUDED.

WORK NOT  
INCLUDED.



Short Form Specification  
for  
The Manufacture, Furnishing and Erection  
of Steel Girders  
for Transportation in the United States

To be used in connection with contract documents and the Standard Specifications for the Construction of the Several Classes of Structures

Note to architect—The Standard Specification does not apply to the design of the structure, but only to the construction thereof.

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- (c) Cement or concrete grading for gutters, washes, floors, etc. See specifications for (.....)
- (d) Furnishing and setting sheet metal, see specifications for (.....)

## MATERIALS AND WORKMANSHIP.

68. All Terra Cotta work under this contract, except as hereinafter specified, shall be executed in strict conformity with the Standard Specification for the Manufacture, Furnishing and Setting of Terra Cotta, adopted by the National Terra Cotta Society; which Standard Specification is hereby declared and made a part of this specification with the same force and effect as if written herein in full.
69. All Terra Cotta (Note:—If several textures or finishes are to be used give location of each) shall be
70. (1) *Unglazed.*  
Surface Finish of flat members shall be
- (a) *Smooth.*
  - (b) *Tooled or Drove.*
    - (b1) Eight lines to the inch.
    - (b2) Six lines to the inch.
  - (c) *Light irregular drag or combing.*
  - (d) *Heavy irregular drag or combing.*
  - (e) *Special.* (Note:—Special surface finishes like "bush-hammered," "pitted," "vermiculated," etc., should be described).
71. The surface finishes of mouldings and curved surfaces generally shall be  
(Note:—Unless otherwise specified these surfaces are generally made smooth).
72. (2) *Unglazed Granite Colors.* Surface finishes of flat members generally shall be (a, b, c, d, e). The surface finish of mouldings and curved surfaces generally shall be  
(Note:—Unless otherwise specified these surfaces are generally made smooth).
73. (3) *Lustrous or Full Glazed or Enameled.* Surface finish shall be  
(Note:—Unless otherwise specified these surfaces are generally made smooth).
74. (4) *Mat or Dull Glazed or Enameled.* Surface finish shall be (See Note 3).
75. (5) *Lustrous or Full Glazed or Enameled Granite.* Surface finish shall be (See Note 3).
76. (6) *Mat or Dull Glazed Enameled Granite.* Surface finish shall be (See Note 3).
77. The color of the Terra Cotta generally shall be (.....)  
.....) as per approved sample or samples.
78. (7) The Terra Cotta comprising.... (described here in detail....) shall be (two, three, four) color polychrome. Colors (....specify where....) shall be blended.

SURFACE  
FINISH,  
CERAMIC  
FINISH AND  
COLOR.



## MATERIALS AND WORKMANSHIP

48. All Joint Cells used in this project shall be of the type specified, shall be mounted in such a manner as to be easily accessible for the Manufacturer's inspection and testing and shall be removed by the National Joint Cells Society. The location of the cells shall be clearly indicated and made a part of the specification with the same force and effect as if written herein.

SURFACE  
FINISH  
GENERAL  
FINISH AND  
COLOR

49. All Joint Cells (Type II) shall be of the type specified and shall be mounted in such a manner as to be easily accessible for the Manufacturer's inspection and testing and shall be removed by the National Joint Cells Society.

50. (1) The location of the cells shall be clearly indicated and made a part of the specification with the same force and effect as if written herein.

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79. (8) The surface finishes of (. . . specify where . . .) shall be fire gilded with (mat or lustrous) gold glaze.

(Note:—Sections 1, 2, 3, 4, 5, 6, are alternates. If there is no polychrome work or no fire gilding omit sections 7 and 8. Sections a, b, c, d, e, are alternates for surface finish).

80. The Terra Cotta manufacturer shall furnish and deliver (f. o. b. cars factory with freight allowed to destination) (on trucks at the site of the building) (and set) all the Terra Cotta as indicated on the drawings or as here described. DELIVERY.

81. All Terra Cotta shall be set by the (Terra Cotta manufacturer), (mason . . .). For such anchors and metal work as are to be furnished by the setting contractor see Standard Specification. SETTING.

(Note to architect:—If the Terra Cotta manufacturer is to set his material include the following clause in the Terra Cotta specification. See also suggested clauses at end of this specification to take care of these omissions and for incorporation in the specifications for the work of other trades).

82. "Hoisting service, storage space, setting mortar delivered on the scaffold, outside and inside scaffolds, runways and platforms, water, temporary light and removal of refuse, shall be furnished to the Terra Cotta manufacturer free of charge by the (. . . mason contractor . . .)."

(Note to architect:—If the work is of such scope or character that the proper handling and setting requires special skill, the following clause may be inserted: "The Terra Cotta manufacturer shall furnish at the expense of the setting contractor a competent Terra Cotta setter to assist in the sorting, selecting, handling and setting of the Terra Cotta.") TERRA COTTA SETTER.

83. (The Standard Specification does not require any joints to be rubbed. If rubbed joints are to be required it should be so stated here). JOINTS.

84. (The Standard Specification requires all joints to be approximately  $\frac{1}{4}$ " wide. If joints of a different width are desired it should be so stated here).



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## Suggestions for Corollary Clauses

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85. 1.—If the Terra Cotta is to be set by the Terra Cotta manufacturer, a clause similar in purport to the following should be included in the general requirements relating to masonry or brick work:
86. "Terra Cotta will be furnished and set by the Terra Cotta manufacturer. Hoisting service, storage space, setting mortar delivered on the scaffold, outside and inside scaffolds, runways and platforms, water, temporary light and removal of refuse shall be furnished to the Terra Cotta manufacturer, free of charge, by the (mason contractor)." A provision should also be included to the effect that the (mason contractor) shall construct the brick (concrete) backing for the Terra Cotta and "The backing shall proceed simultaneously with the setting of Terra Cotta. Each piece of Terra Cotta shall be backed up solid with brick and mortar, so as to make a perfect bond and homogeneous mass between wall lines. This backing shall extend beyond the wall line when necessary to structural stability. If concrete is used it shall not be stronger than a 1 to 9 mixture."
- Also a provision under which the (mason) contractor shall place all concrete or cement grading for gutters, washes and balcony, loggia or other floors.
87. In the case of parapet walls specifications should state that flashing if used shall be carried through the wall, or if flashing be not used the back of the parapet wall shall be damp-proofed and the water-proofing carried through the wall.
88. 2.—In the specifications for sheet metal work there should be included a clause similar in purport to the following:  
 "The washes on all cornices and other exposed surfaces, where shown or specified, shall be covered with ( ) which shall be turned up against vertical surfaces (cap flashed) and cemented into the raggles provided for the purpose in the Terra Cotta."
89. 3.—Structural Supports.  
 Under "Structural Steel," a clause similar in purport to the following should be included:  
 "Beams, channels, angles, T's, plates and fabricated members for supporting Terra Cotta, and which are secured to the structural steel with short bolts or rivets, shall be furnished and erected by the contractor for (structural steel.)"
90. Under "Structural Concrete" a clause similar in purport to the following should be included:  
 "Steel beams, channels, angles, T's, plates, fabricated brackets and outlookers and other members, bolts, rods, wires, anchors, and sleeves for supporting Terra Cotta, which are imbedded in the structural concrete, also shelf angles and continuous rods attached to structural concrete shall be furnished and set by the contractor for structural concrete, in strict accordance with setting drawings prepared by the





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Terra Cotta manufacturer." (For information as to the sizes and character of bolts, rods, anchors, etc., see section E paragraphs 24 to 35 inclusive on "Supporting Metal Work and Anchors" of Standard Specification for the Manufacture, Furnishing and Setting of Terra Cotta. Such supports should be clearly shown on the drawings).

91. 4.—Under "Rough Carpentry" or other suitable division of work, there should be included a clause providing that the contractor shall furnish, set and maintain all centering, cover boards, boxing and protection for Terra Cotta, and remove the same upon completion of the work.



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